Robert Schuman Centre

Global Competition and EU Environmental Policy

EU Policy for Ozone Layer Protection

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Debates about "sustainable development" during the past decade have highlighted the intimate interconnection between "environment" and "economy".[2] It is now widely agreed that concerns about one cannot be divorced from concerns about the other. Environmental policy obviously has profound implications for the economy; just as economic policy has ramifications for the quality of the environment, and efforts to improve the same.[3]

Given the greater acceptance of these links, analysts have paid more attention during the past ten years to the ways in which the two interact. This paper aims to contribute to this general debate by looking at one particular question: to what extent have concerns about economic competitiveness, and the interests of industry more generally, influenced the development of the European Union's policy on ozone layer depletion?

By focusing upon this rather specific question, it is anticipated that a number of different areas will be opened up for exploration. Most obviously, the concerns of the Union's producers and users of ozone-depleting substances will be revealed -- not only the factors that have affected perception of their own interests, but also the ways in which they have tried to exert control over policy reform. The question also directs attention to the decision-makers -- that is, it invites us to investigate how decision-makers have reacted to these pressures.

The paper is divided into five subsequent sections. Section two presents a brief overview of the issue of ozone layer depletion. It focuses, in particular, upon the EC/EU response, while nevertheless placing it within the broader global context. The next three sections analyse a number of individual debates, broadly following a chronological order. More specifically, they focus upon the regulation of chlorofluorocarbons, hydrochlorofluorocarbons and a few more recent concerns, which include the regulation of methyl bromide. The paper concludes with a summary, as well as some tentative answers to the questions initially posed.

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2 The author thanks Andrew Jordan (CSERGE) and the participants at the workshop in Florence for their helpful comments on an earlier version of this paper.

3 For further information about the relationship between 'environment' and 'economy', see WCED (1987) -- the publication that did more than any other to popularise the notion of 'sustainable development' -- and MacNeill et al (1991).

Overview

During the past quarter of a century, the issue of ozone layer depletion has attracted considerable scientific and political attention. Though not without its ups and downs, the international community has steadily strived to reach progressively more-restrictive agreements on the production and use of the chemicals that serve to deplete the planet's protective layer of stratospheric ozone. A full examination of the issue's development is, of course, beyond the scope of this contribution (Morrisette 1989, Parson 1993, Rowlands 1995a, Parson and Greene 1995). What is useful for the purposes of this particular study, however, is a review of the key decisions emerging from both global and European fora.

Table 2.1 lists the most significant global agreements. Of particular note in this list is the landmark 1987 Montreal Protocol, along with its subsequent amendments. Table 2.2, meanwhile, lists the outputs arising from European discussions. Since 1988, they have mainly taken the form of Regulations, as European decision-makers have decided how the global agreements should be implemented, and possibly built upon.[4]

As the purpose of this section is to lay the backdrop for the rest of the paper, it is also useful to remind ourselves of the "balance of power" between the Commission and the Member States throughout the history of the ozone layer depletion issue. This is crucial to ensure a full understanding of the development of the European response.

[4] Environmental outcomes at the EC level have usually taken the form of `Directives', which, though binding on all Members States with respect to the result to be achieved, nevertheless leave responsibility with regard to the form and means to be used to achieve the stated objectives up to the Member States. Alternatively, the legal form for implementation of the Montreal Protocol and its amendments has been the 'Regulation'. Regulations have direct application in the Member States and come into force immediately. Jachtenfuchs argues that this was done "in order to avoid trade distortions resulting from non-simultaneous application of the proposed legislation, and also to underline the urgency of the matter" (Jachtenfuchs 1990:269).

Table 2.1 Major International Agreements

International Agreement	Key Dates and Status	Major Commitments
Vienna Convention on Depletion of the Ozone Layer	opened for signature: 22 March 1985 entered into force: September 1988 current status: 156 ratifications (at 31 March 1996)	-- none.
Montreal Protocol on Substances that Deplete the Ozone Layer	opened for signature: 16 September 1987 entered into force: January 1989 current status: 155 ratifications (at 31 March 1996)	-- freezing of consumption of five CFCs by 1992 and 50 per cent reduction by 1999. -- freezing of consumption of three halons by 1992.
London Adjustments and Amendments to the Montreal Protocol	agreed: 29 June 1990 amendments entered into force: August 1992 current status: 106 ratifications (at 31 March 1996)	-- elimination of 15 CFCs, three halons and carbon tetrachloride by 2000. -- elimination of methyl chloroform by 2005.
Copenhagen Adjustments and Amendments to the Montreal Protocol	agreed: 25 November 1992 amendments entered into force: June 1994 current status: 57 ratifications (at 31 March 1996)	-- elimination of 15 CFCs, carbon tetrachloride, methyl chloroform and HBCs by 1996. -- elimination of three halons by 1994. -- freeze of HCFCs by 1996, with their eventual elimination by 2030. -- freeze of methyl bromide by 1995.
Vienna Adjustments to the Montreal Protocol	agreed: 7 December 1995	-- lower cap on HCFCs, but elimination date remains at 2030. -- elimination of methyl bromide by 2010, with 25 per cent cut by 2001 and 50 per cent cut by 2005.

Sources: The Vienna Convention, the Montreal Protocol, the London Adjustments and Amendments, and the Copenhagen Adjustments and Amendments are reprinted in *International Legal Materials*. Respectively, each appears in: Vol. 26 (1989), pp. 1516-40; Vol. 26 (1989), pp. 1541-61; Vol. 30 (1991), pp. 537-54; and Vol. 32 (1993), pp. 874-87. The Vienna Adjustments may be found on the WorldWideWeb.

Table 2.2 Major European Agreements

European Agreement	Date Agreed	Major Commitments
Resolution (C133)	30 May 1978 (OJ C133, 7 June 1978)	-- calls for industry not to increase production capacity of two CFCs.
Decision 80/372	26 March 1980 (OJ L90, 3 April 1980)	-- calls on all Member States to take all appropriate measures to ensure that there is no increase in production capacity of two CFCs. -- Members States are to achieve a 30 per cent reduction in the use of CFCs in aerosol cans by 1982.
Decision 82/795	16 November 1982 (OJ L329, 25 November 1982)	-- repeats obligation of Decision 80/372 -- adds a definition of production capacity and a reference figure for annual Community CFC production capacity (480 000 tonnes).
Decision 88/540 and Regulation 3322/88	14 October 1988 (OJ L297, 31 October 1988)	-- enables the Community to ratify the Vienna Convention and the Montreal Protocol. -- implements the terms of the Montreal Protocol.
Regulation 594/91	4 March 1991 (OJ L67, 14 March 1991)	-- elimination of CFCs advanced by mid-1997, carbon tetrachloride by 1998, halons by 2000 and methyl chloroform by 2006.
Regulation 3952/92	30 December 1992 (OJ L405, 31 December 1992)	-- elimination of halons by 1994, CFCs and carbon tetrachloride by 1995 and methyl chloroform by 1996.
Regulation 3093/94	15 December 1994 (OJ L333, 22 December 1994)	-- freezing of methyl bromide production by 1995, and 25 per cent reduction by 1998. -- elimination of HCFC consumption by 2015, with five intermediate targets (cap set at 2.6 per cent of CFC consumption and HCFC consumption in 1989). -- elimination of HBCs by 1996.

When international debate about the ozone layer began -- during the mid-1970s -- "it was not clear that the EC was competent to negotiate in these matters" (Jachtenfuchs 1990:262). This, however, did not prevent the Commission from participating in the ongoing international negotiations, and, indeed, signing the Vienna Convention when it was opened for signature in March 1985.[5] Of most significance, however, was a decision taken at a meeting of the EC Environment Council on 24 November 1986. At that time, the Member States authorised the Commission to take part, on behalf of the Community, in the negotiations towards a protocol. The Commission was, however, presented with a well-defined mandate (Jachtenfuchs 1990:265) -- a mandate which, under the terms of the Treaty of Rome, had to be agreed unanimously by the Council.

This has continued to be the general trend since that time -- that is, the Council of Ministers has debated a particular position, which, when agreed, has been presented to the Commission. The Commission has, in turn, negotiated on behalf of the Community in the international meetings. When agreements have been reached at this level -- at so-called "Meetings of the Parties to the Montreal Protocol" -- the issue has returned to the Council of Ministers. The Member States' environment ministers have had to decide how the commitments agreed at the international forum should be translated into EC and Member State law (and whether the Community should go beyond the terms of the just-reached international commitment). A development worthy of note, however, is that the Single European Act of 1987 introduced the possibility of Qualified Majority Voting; this has in fact been used in the development of policy on ozone layer depletion. Moreover, the Treaty on European Union of 1992 provided for even further input -- stronger powers of veto and amendment -- by the European Parliament (Chance 1995); though to a limited extent, Parliament has nevertheless also been involved in the ozone layer depletion issue.

Controlling CFCs

Discussions About a Potential "Can Ban", 1974-1985

When significant concern about potential ozone layer depletion first arose, chlorofluorocarbons (CFCs) were the set of chemicals initially deemed most

5 The issue of external competence and the Commission's ability to negotiate on behalf of the Member states also plays a crucial role in the cases of pesticides (Working Paper RSC 98/3), marine pollution (Working Paper RSC 98/4) and carbon emissions (Working Paper RSC 98/5).

culpable.[6] The United States was the first country to react. In 1977, a "can ban" was instituted there -- that is, a restriction upon the use of CFCs as propellants in non-essential aerosol sprays. Soon afterwards, US representatives began to push for a similar global ban.[7] With this, we see the first connection between the European Community's external policy on the ozone layer and its concern for competitiveness at a variety of levels. (Table 2.3 reveals that Community production of CFCs in 1974 accounted for one-third of the world total, though somewhat less than that of the United States.)

The Community response at this time was cautious, to say the least. As outlined in Table 2.2, Community agreements fell short of the desired can ban; indeed, the production cap adopted in 1980 had little impact (because European industry was operating well below capacity at this time), and the 30 per cent reduction in the use of CFCs in aerosol cans was easily achievable because use figures were already declining (in response to changes that had already occurred). In fact, Haigh suggests that "there is reason to believe that the figure of 30 per cent was chosen because it was known that it could be achieved without creating too much difficulty for industry" (Haigh 1989:268).

Table 2.3
Global Production of CFC-11 and CFC-12 by Country/Region, 1974

Country/Region	Percentage Share
United States	44
European Communities	33
Japan	8
USSR and Eastern Europe	8
Other OECD	5
Developing Countries	2

Note: All calculations by weight.
Sources: Compiled from Gamlen et al (1986); OECD (1976) and Thornton (1990).

[6] Some of the discussion in this section is taken from Rowlands (1995, Chapter 5).

[7] A full description of the US position may be found in Benedick (1991).

Can EC prudence during the late 1970s really be explained by concerns for industrial competitiveness? Two immediate reasons -- suggesting that any can ban in the EC would have been much more economically damaging than it had been in the USA -- suggest that it can. First, more CFC production went to the aerosol spray industry in the EC as compared to the USA -- in both relative and absolute terms.[8] As a consequence, an EC ban upon the use of CFCs in non-essential aerosols would affect a greater proportion of its industry, and could thereby be more economically disruptive in Europe than it had been in the United States.

And second, the international trade in CFCs was very lucrative for a number of European states during the 1970s. Indeed, compared with the US, EC countries exported a higher share of their CFC production. The value of British exports, for example, was placed at [UK]£70 million in 1974 (DoE 1976:6). Thus, if the EC states were to restrict production, then substantial export markets might have to be forsaken. Explicitly citing this as a rationale for its own *laissez-faire* policy on CFCs, the UK Minister of State for the Environment, Denis Howell, said in 1975 that an aerosol ban could cause "a considerable loss to our balance of payments" and have "far-reaching repercussions on the aerosol industry" (NS 1975:336).

More generally, reports from both national governments and the Commission itself highlighted the detrimental economic impact that further regulation could have. As an example of the former, the British Department of the Environment estimated that 50,000 jobs were "related, either directly or indirectly, to some aspect of CFC manufacture or usage" (DoE 1976:6). In a 1980 communication (COM(80)339 16.6.80), meanwhile, the Commission stated that any further reduction in CFC use in aerosol sprays (beyond the 30 per cent figure) would "be likely to cause socio-economic problems because of existing overcapacity in the industry" (Haigh 1989:267).

References to the United Kingdom in the above paragraphs suggest that this country had a particular interest in the development of the debate. And so it did. At the end of the 1970s, the UK was reported to be the largest producer of aerosol units in the Community (Haigh 1989:267), and British entities worked to defend these interests. In 1978, for example, a report published by the British

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[8] In 1973, approximately three-quarters of all CFCs used in the EC went into aerosol sprays, while in the US, the figure was just under one-half. This also meant that, even in spite of the greater consumption of CFCs in the United States, there were still more aerosol units, in absolute terms, filled with CFCs in the Community as compared with the United States. (Data from Engelmann 1982:53, Layman 1986:42 and OECD 1976:14.)

Aerosol Manufacturers Association noted that there was much scientific confusion, and therefore "there is no hazard in waiting for more definite scientific conclusions, nor any reason to restrict manufacturers' choice of propellants for aerosol cans" (NS 1978:830). The British government often echoed such views.[9]

Thus, there is some strong evidence to suggest that there was a correlation between concerns for competitiveness and external policy on this particular environmental issue during the late 1970s. Indeed, Richard Benedick -- who served as the lead negotiator for the United States during much of the negotiations -- is thus convinced. He argues that during the 1970s, the EC Commission:

> was sympathetic to industry arguments that strong controls on aerosols would impose hardships because of the substantial existing overcapacity and the allegedly large capital investment required to convert to the hydrocarbon propellants used by companies in the United States. .... In addition, all the EC 'regulations' were actually implemented by voluntary agreements with the manufacturers. In sum, these were painless moves, fully supported by European industry, that gave an appearance of control while in reality permitting continued expansion (Benedick 1991:25).

With a change of administration in the United States, coupled with less urgent scientific reports, the ozone layer debate fell down the international agenda during the first half of the 1980s (Rowlands 1995a). Notwithstanding the opening for signature of a framework convention in March 1985 (see Table 2.1), less pressure existed for further regulation. This attitude, however, changed dramatically with the announcement of the discovery of an "ozone crater" over Antarctica in May 1985, and more urgent scientific findings.

Protocol Negotiations, 1986-1987

With this dramatic, and unexpected, finding, the international negotiations were given a greater sense of urgency. Informal discussions about an international protocol took place throughout 1986; the following year, formal negotiations began. (Note, in Table 2.4, that by 1986, EC production of CFCs had clearly

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[9] In April 1976, UK Environment Minister Denis Howell remarked:

To put this matter [potential ozone layer depletion] in perspective, this [any projected increase in ultraviolet radiation reaching ground level] would be equivalent to the increase in exposure incurred by a person moving from Northern England to the South Coast of England. (HC 909 567 W, quoted in Purvis 1994).

surpassed that of the United States, making the Community the largest single producer in the world.)

The US led the calls for strong controls, continuing to argue the case for a immediate prohibition on CFCs as aerosol propellants. In light of this particular emphasis, the European reaction continued to be cautious. For his part, Benedick argues that:

> Some European industrialists had suspected all along that the United States was using the ozone scare to cloak commercial motivations. They now believed that American companies had endorsed CFC controls in order to enter the profitable EC export markets with substitute products that they had secretly developed (Benedick 1991:123).[10]

Although this position might be a bit extreme,[11] concerns about the impact of the international negotiations upon the economy were invariably affecting the EC negotiators' perspective. However, they recognised that if they were not at least seen to be receptive to the Americans' efforts to forge an international agreement, then the United States could well follow up their fresh threat to take unilateral action and impose trade sanctions (Haas 1993:165). For this and other reasons, some action was considered.

Table 2.4 Global CFC Production by Country/Region, 1986

Country/Region	Percentage Share
European Communities	42
United States	28
Japan	12
USSR and Eastern Europe	11
Developing Countries	4
Other OECD	3

Note: All calculations by weight.
Sources: Compiled from UNEP (1993), Gamlen (1986), Thornton (1990).

[10] Benedick goes on to note that: "... this suspicion was unfounded: to the dismay of environmentalists, du Pont had admitted in 1986 that it had ceased research on chlorofluorocarbon alternatives in 1981" (p. 123).

[11] For the argument that Benedick misunderstood and therefore misrepresented key elements of the European position, see McConnell (1991).

For the purposes of this paper, it is appropriate to focus not only upon the extent of reductions in CFCs being advocated by different groups in the negotiations during the first half of 1987, but also upon the kinds of reductions. The latter highlights some differences of opinion. On the one hand, the United States (and its allies, often collectively referred to as the 'Toronto Group'[12]) continued to push for a control upon particular end uses (specifically, the can ban). The EC, on the other hand, wanted attention directed to all CFCs, arguing that a molecule of CFC had the same impact upon the ozone layer, irrespective of its source. Their representatives also argued that production -- rather than consumption -- should be the figures that were controlled, for this would be easier to monitor. These preferences can be explained at least in part by the impact that specific end use controls upon consumption would have upon EC competitiveness.

Because of the already existing ban on CFCs as aerosol propellants in the United States (and some other countries), alternatives (both substitute chemicals and new technologies) had been developed by American industry. Consequently, if a can ban were at that time to be implemented world-wide, then American companies would have potentially-lucrative export markets opened up by a global ban. Moreover, even if there were regulations placed upon all CFCs (that is, not distinguishing between end-uses), the US would still have an interest in advancing a 'consumption' basis. If this were the case, then CFC exports would effectively escape regulation (for consumption would presumably be calculated by production minus exports plus imports). Faced with no restraints upon future international activity, the large US producers of CFCs could be tempted to compete against European producers around the world.

Alternatively, however, if the regulations limited production, then the dominance of the EC in global export markets would be preserved (for any other country could only increase export sales at the expense of domestic consumption). And, at a much more basic level, restrictions that did not focus upon end-uses would also favour the EC: they could make the initial reductions in areas of their choice. Alternatively, a global can ban would not only serve to cut off valuable export markets, but could also force EC countries to import alternative chemicals and replacement technologies. Obviously, this would be a double-blow to the Member States' trade balances.

Not surprisingly then, the EC, even when it accepted the notion that cuts were possible, was still only willing to consider such moves for CFC production

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12 This included the United States, Canada and the Nordic countries.

as a whole -- ostensibly for two major reasons. First, because it would be easy to administer (because of the relatively small number of CFC producers), and second, because any ban on particular end uses would only be a temporary remedy (for increases in other uses would inevitably continue). Nevertheless, it is clear that concerns about competitiveness inevitably were also a part of the calculation made by EC representatives.[13]

In the end -- that is, at the conference in Montreal in September 1987 where a protocol was eventually agreed -- a compromise was reached: both production and consumption were controlled, with the former permitted to be slightly higher than the latter. (This was designed to create excess supply in Northern countries, which would thus allow a limited expansion in exports in order to meet the 'basic domestic needs' of developing countries.) Given this -- along with the lack of differentiation among end-uses in the Protocol -- it is clear that the 1987 Treaty reflects EC economic interests, at least to some extent.

The view that the Community's actions during the Protocol negotiations can be explained, at least to a significant degree, by concerns for competitiveness and industrial interests more generally, is one that is held by many commentators. Karen Litfin, for one, argues that during 1986, the "EC's position was strongly influenced by industry; in fact, industry representatives sat on the delegations of some EC countries" (Litfin 1994:107). Benedick also maintains that the EC view "followed the industry line and reflected the views of France, Italy, and the United Kingdom" (Benedick 1991:68). Oye and Maxwell argue that both "the US and the EC wished to prevent the other's industry from gaining a competitive advantage through the content of an international agreement that limited the usage of CFCs" (Oye and Maxwell 1995:199). And perhaps the most telling indictment is a quotation from the individual who was shepherding the international negotiations at this time, UNEP Executive-Director Mostafa Tolba, who reportedly said that the "difficulties in negotiating the Montreal Protocol had nothing to do with whether the environment was damaged or not. It was all about who was going to gain an edge over whom; whether Du Pont would have an advantage over the European companies or not" (MacKenzie 1988:25).

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[13] Additionally, the EC insisted upon being treated as a single unit for the purposes of consumption. Its representatives argued that, because this figure included imports and exports, restrictions upon the consumption levels of individual Member States would pose a barrier to trade within the Community and thus contrary to the Treaty of Rome and efforts to create a Single Market. (Benedick 1991:95-97.)

Notwithstanding these observations, however, it is clear that the entire process can not be wholly explained by concerns for competitiveness and industrial interests more generally. Pressure for regulatory reform derives from advances in scientific knowledge, competing goals of global environmental protection, and the dynamics inherent to the bargaining process itself. Indeed, simply note that the Montreal Protocol was actually agreed, and that it imposed significant obligations upon its Parties: before conclusive scientific evidence was available, countries had agreed to halve their production and consumption of a range of "vital" industrial chemicals. Moreover, Edward Parson argues that concerns for competitiveness found less voice as the negotiations continued: "Several observers contend that it was sometime between September 1986 and April 1987 that European industry lost control of national delegations" (Parson 1993:42).

Finally, telling the story as we have done here suggests a certain uniformity of purpose and interests on the part of the EC and its Member States during the negotiations towards a Protocol. This was certainly not the case, for it is certainly important to highlight the differences *within* the Community -- that is, the way in which different perceptions of economic impacts did or did not play a role in the policies of various Member States. In such a discussion on the Protocol negotiations, attention is usually initially directed to the United Kingdom and France.

Table 2.5 CFC Production in EC Member States, 1986

Country	Tonnes of CFC produced	Country	Tonnes of CFC produced
Belgium	0	Italy	60,000*
Denmark	0	Luxembourg	0
France	73,157	Netherlands	45,859
Germany	125,579	Portugal	0
Greece	14,040	Spain	34,896
Ireland	0	United Kingdom	106,129

* -- estimate
Sources: UNEP (1993), Greenpeace (1995).

Table 2.5 reveals that the United Kingdom was Europe's second-largest producer of CFCs in the mid-1980s.[14] Within this, meanwhile, Imperial Chemical Industries (ICI) was the major British producer.[15] The chemical industry in general, and ICI in particular, has traditionally had a special position in the eyes of successive British governments.[16] As a consequence, many argue, ICI exercised a considerable influence upon UK decision-making, pushing for a sceptical "go slow" approach. During the late 1970s and early 1980s, for example, while some were pushing for a wider negotiation mandate for the Commission, the British (often with the French) ensured that the Council, which had to decide unanimously, was not granted it (Jachtenfuchs 1990:265). For his part, Benedick argues that ICI not only influenced British policy, but was also "the driving force in the European Council of Chemical Manufacturers' Federations, which was an active lobbyist in Brussels and a conspicuous presence during the negotiations" (Benedick 1991:39). Indeed, the movement that was eventually seen in the EC's negotiating position (particularly during the summer of 1987) stemmed significantly from a relaxation of the British attitude. This, in turn, many argue, came about as a result of a change in attitude on the part of ICI (Jachtenfuchs 1990:268, Maxwell and Weiner 1993).[17] Thus, the concern for economic competitiveness and industry was prevalent in the British position.

A similar story can be written about the influence of Atochem upon France, the Community's third-largest CFC producer in 1986. The interests of the French government in Atochem extended beyond simple concern about the health of the nation's economy as a whole: it is part of the state chemicals giant Elf Aquitaine. As a result, the French government -- and occasionally individual

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[14] Any suggestion as to production levels of chemicals must be taken cautiously. Owing to concerns about inter-industry secrecy, companies are loath to publish explicit figures about production levels (or the value of the same) of chemicals. Consequently, such figures are often estimates or even 'best guesses'.

[15] "By the late 1980s, ICI accounted for more than 80 percent of total British CFC output ..." (Maxwell and Weiner 1993:33).

[16] See, for example, Grant et al 1989:78. Moreover, Maxwell and Weiner argue that "... the British departments were unapologetic about the closeness of government-industry collaboration" (Maxwell and Weiner 1993:30).

[17] ICI were also concerned that "[c]onsumer-driven environmental concerns, which were widespread in 1987, were not limited to CFC products, and could potentially diminish the sales of the entire ICI Group" (Maxwell and Weiner 1993:33).

Commissioners[18] -- worked to protect their interests. It was only after the British *volte-face*, when the French found themselves virtually isolated in their belief that controls could be slower, that a relaxation of policy was considered.[19]

Turning to the largest producer of CFCs in the Community, one might similarly expect industry to influence the position of government and to advocate a "go slow" approach. This, however, was not the case. West Germany was more pro-active in the negotiations than the other major Community producers. Indeed, Benedick credits West Germany with being "at the forefront" in the drive for tighter controls on CFCs (Benedick 1991:113).[20] In 1986, for example, the country registered a formal protest when a Council Decision was, in its eyes, too conservative (Benedick 1991:69). Additionally, during the negotiations for the Montreal Protocol, the German representatives pushed for an aerosol ban and a 50 per cent overall reduction (Benedick 1991:84). They also co-sponsored reports (for example the 1986 WMO/NASA Assessment) and held a number of major scientific meetings on the issue (Litfin 1994:110).

The West German calls for regulatory reform on ozone layer depletion can largely be explained by domestic public pressures. Indeed any belief, on the part of that country's decision-makers, that the demand for controls on CFCs could be resisted were discarded after the 1986 elections -- a time at which the Green Party made an impressive showing. Because of this tide, officials in both the West German government and the country's chemical industry had a desire for Europe to take the lead on the issue, for a variety of reasons. The businessperson, for one, wanted "a common set of conditions for marketing [his/her] products in order to avoid costly duplication of tests" (Grant, Paterson and Whitson 1988:289). Second, regulation at the European level would more likely be weaker than it would otherwise be if made only in West Germany. As Grant and colleagues argue, West German industrialists recognised that, at the European level,

> the "Greens" are weaker, and other countervailing forces can be mobilised. At the very least, it can be ensured that the "misery is shared" so that the German

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18 Benedick -- developing his general thesis that the European view was informed by a need to protect industry -- reports that a paper distributed by the French government, with 'EC views' contained therein, was published on Atochem letterhead (Benedick 1991:78).

19 The Spanish and Italians have also been identified as 'draggers' by some.

20 He also notes that West Germany "was instrumental in turning around the European Community's initially negative position" (p. 6).

> chemical industry is not disadvantaged by more stringent environmental regulation than applies elsewhere in Europe (Grant et al 1989:78).

And third, West German support for EC solutions is also fuelled by "a high degree of compatibility between their political/administrative assumptions and community procedures" (Grant et al 1988:290). Thus, West German willingness to adopt a strong European position might still be explained, at least in part, by concerns about economic competitiveness and the health of industry more generally.

Nevertheless, the caution that was called for when examining the Community as a whole should also be exercised here. There were costs upon all EC countries. Even in those that were not producers of CFCs, there were entities -- for example, aerosol propellant producers, dry-cleaners, refrigeration, etc -- that were reliant upon the use of CFCs in the goods that they produced and sold. Conceivably, therefore, all member states could be adversely affected by any restriction upon the production and consumption of CFCs. In spite of this, a number of countries were extremely forward-looking. Denmark, for one, pushed for a strong consumption formula during the protocol negotiations (Benedick 1991:80). The Dutch and the Belgians were two other countries often identified as part of this more "pro-active" grouping (Benedick 1991). The negotiating positions of these states highlights again the occasional dominance of competing sources of pressure for regulatory reform.

Accelerated Phaseout, 1987-1995

Following the Protocol negotiations, implementation in the Community was the first task. Under the West German Presidency during the first half of 1988, that government's representatives tried to push the Community to go beyond the terms of the Protocol (and thus implement even tighter controls upon ozone-depleting chemicals, as the West Germans had done unilaterally). Though these efforts helped ensure the Council agreed to ratify both the Vienna Convention and the Montreal Protocol in June 1988, Jachtenfuchs argues that the wishes of DGIII (internal market) were able to reign supreme (over not only the preferences of the West Germans, but also DGXI (environment)), and the Protocol was implemented virtually "word-for-word" in EC regulation (See Table 2.2).

Nevertheless, by the end of 1988, a further change of attitude took place among the traditionally-sceptical in the Community. With the "greening" of Mrs. Thatcher in the autumn of 1988, the door was opened for a more pro-active

British position. The final thrust for this came from not only the impact of British scientific reports,[21] but also the agreement from ICI for a total phaseout.

Though the final shift in the ICI position is publicly-attributed to an industry review of the Ozone Trends Panel's report from March 1988 (Parson 1993:46), Maxwell and Weiner place emphasis upon commercial considerations. They note that in 1988 it was expected that CFCs would largely be replaced by other chemicals. As a result, opportunity for first-mover advantages arose--"[p]roducts and market share would accrue to the companies that developed process technology for making substitutes in the most cost effective and rapid manner possible" (Oye and Maxwell 1995:200). The fact that the substitute chemicals might be five times as costly as CFCs lent further impetus (Maxwell and Weiner 1993:33-34). Finally, Litfin highlights the attraction for ICI of potential international markets -- that is, if global controls were implemented, then global markets for substitutes could well be forthcoming. Ironically, "ICI paid the travel expenses for some delegates from developing countries to attend [the March 1989 conference in London on 'Saving the Ozone Layer'" (Litfin 1994:211-212, fn8). The French change of opinion, meanwhile, was further prompted by increased isolation, and desires on the part of President Francois Mitterand to do nothing to blemish his environmental credentials.[22] The interests of Atochem in the potential substitute chemicals (see below) no doubt also played a role.

So by the end of the decade, it was clear that the days of CFC use in the industrialised world were numbered.[23] While this is not meant to suggest that the challenge posed by CFCs had necessarily been met -- developing country

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[21] The UK's Stratospheric Ozone Review Group released its report in the summer of 1988. In this, they agreed that the controls in the Montreal Protocol would not be sufficient to prevent further significant destruction of the ozone layer. (UKSORG 1988).

[22] The French change of heart (which was fully apparent by March 1989) was explained thus:

"... France, maintaining that unilateral reductions would not save the ozone layer and would only benefit non-European companies, had found itself isolated in its opposition to stringent reductions. But France relented, apparently favouring its political interests over its economic interests. President Mitterand, taking a leadership role in efforts to prevent global climate change, was cosponsoring an international conference on the global environment in The Hague later that month. Had his government blocked efforts in the EC to save the ozone layer, Mitterand would have been in an embarrassing position at that conference" (Litfin 1994:128-9).

[23] Many CFC users, for their part, were not resisting further controls, for they eventually found that alternative methods were often cheaper than the CFC-based procedures they replaced.

use, illegal trade and implementation more generally are still three outstanding tests -- it is meant to imply that the most contentious debates about CFC production and use in the European Union had, by the end of the 1980s, been resolved.

Controlling HCFCs

With the elimination of CFCs gaining widespread support among the OECD countries during the late 1980s, greater political attention could be paid to the other potential ozone-depleters. Top of this list were hydrochlorofluorocarbons (HCFCs). HCFCs were identified as potential substitutes for up to 30 per cent of the controlled CFCs.[24] Although more ozone-benign than CFCs, they were by no means "wonder chemicals", for they still destroyed some stratospheric ozone. In light of this fact, pressure mounted during the first half of 1990 to impose restrictions upon their use at the Second Meeting of the Parties in London in June of that year.

A number of industry officials resisted this pressure. They maintained that society's primary goal must be to eliminate CFCs as quickly as possible. Although there were problems associated with the use of HCFCs, they were perceived to be the most attractive alternative, at least during this "transition phase". Thus, the argument continued, it was better to use the lesser of two evils while more appropriate alternatives were being developed and tested -- in this instance, therefore, the ends justified the means. This view generally prevailed during the June meeting, and no restrictions were placed upon the chemicals. Instead, signatory nations called for "producers to use [HCFCs] responsibly, and work towards eliminating them by 2040" (Schoon 1990:1).

Identifying this as the industry view, however, hides some interesting variations among companies' respective interests in HCFCs (see Table 2.6). Karen Litfin, for one, reports that the German CFC industry "was silent on the issue of HCFCs, having chosen not to invest in chemicals that would only be transitional and to rely instead on ozone-safe HFCs [hydrofluorocarbons]" (Litfin 1994:150). In the United Kingdom, ICI had taken a similar strategic decision -- deciding not to invest heavily in HCFCs, but instead also to go on to HFCs (Maxwell and Weiner 1993:34-35). As a consequence, both entities had interests in regulatory reform which placed controls on HCFCs -- or at least for clear signals to be sent that HCFC regulation of some kind was inevitable -- for

[24] This was the estimate at the time. It has since been revised, for hydrocarbons have taken much more of the market than originally anticipated.

this would encourage users to leapfrog the use of HCFCs and proceed straight to HFCs.

Table 2.6 Estimated HCFC Production, 1986-1995

Country	Tonnes of HCFC production	Country	Tonnes of HCFC production
Belgium	0	Italy	68,400
Denmark	0	Luxembourg	0
France	335,000	Netherlands	95,000
Germany	95,000	Portugal	0
Greece	20,000	Spain	75,000
Ireland	0	United Kingdom	155,000

Source: Greenpeace (1995).

By contrast, the French company Atochem had taken a strategic decision to invest heavily in HCFCs. Between 1986 and 1995, the French were responsible for 40 per cent of EC production, more than twice as much as the second-placed British. Indeed, one report suggested that Atochem was, in 1992, the largest single producer of HCFCs in the world (ENDS 1992a:14).[25] One might therefore expect the French to be more resistant to controls upon HCFCs. This indeed has been the case. As a consequence, the Commission was prevented from taking a pro-active line on HCFCs during the negotiations at the Fourth Meeting of the Parties in Copenhagen. While most of the Member States wanted the CFC element of the HCFC cap to be set at somewhere between 2 and 2.5 per cent, the French still wanted it to be pegged at 4.0 per cent (ENDS 1992a:14).[26] French resistance was buttressed by both the United States and the developing world.

[25] A Greenpeace report suggests the same for the period 1986-1995 (when taking ozone-depleting potentials of different HCFCs into account) (Greenpeace 1995).

[26] At Copenhagen, the French also broke ranks by pushing for the intermediate target (that is, a 35 per cent reduction) to take place in 2010 rather than 2003, as previously agreed by the EC (Follett 1992).

The position of the US delegation was informed by the fact that HCFCs are used in the large air conditioners that cool office buildings. The country that makes the most use of these large chillers is the United States. Because these air conditioners have economic lifetimes of up to 40 years, businesspeople wanted to ensure that they would be able to keep these chillers operational throughout this period. The 0.5 per cent usage allowed between 2020 and 2030, which the US delegation demanded and received, guaranteed these machines' continued utility.

Developing country representatives, meanwhile, were concerned that a quick contraction of the OECD market for HCFCs would have knock-on effects for their own development prospects -- that is, this possible substitute would not be available as an option. Wanting no possibilities to be prematurely, and unfairly, foreclosed, they also pushed for laxer controls. Given this, the majority of the EU countries could do little to prevent the cap from being set higher than they would have liked -- namely, 3.1 per cent (Rowlands 1993).

When EC Environment Ministers met the following month (December 1992) in order to consider how the changes agreed at Copenhagen might be implemented (and whether or not the Community should go beyond the global goals), this debate continued. While some Member States -- particularly Germany and Denmark -- pushed for an accelerated timetable (phaseout by 2000-2005) and a lower cap, the French continued to lead the resistance to this. During the beginning of 1993, this debate continued behind the scenes, with the French continuing to press for nothing more than the terms of the Copenhagen agreement (EB 1993:4). Indeed, though DGXI had a proposal ready for the Environment Council which went beyond the terms of the Copenhagen agreement, this effort was apparently blocked in March by Commission President Jacques Delors, who was reportedly following objections raised by the French company Atochem (ENDS 1993a:37).[27]

Three months later (in June), a proposal was finally tabled at a meeting of the Council. In this, the magic figure for the cap was set at 2.5 per cent (as compared with the 3.1 per cent agreed at Copenhagen), and the complete phaseout date proposed as 2014 (as compared with 2030) (ENDS 1993a:37). The respective groups of supporters and opponents that formed in response did

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[27] A spokeswoman for Atochem called such charges of interference 'idiotic stories'. However, a Commission source, speaking on the condition of anonymity, claimed: "You can quite rightly blame France. ... They're going to attack [the Commission's proposals] so that Atochem will be able to get the greatest possible (HCFC) consumption in the EC" (Love 1993). It was reported later that the industry and agriculture directorate generals, DG III and DG VI respectively, also hindered the progress of the Commission's proposal (Reuters 1993).

produce one surprise. As expected, Denmark and Germany continued to push for more -- each citing its own domestic plans for going well beyond the terms of either the Copenhagen amendment or even the draft proposal. Equally as expected, the French delegation said that it was opposed to any new controls upon HCFCs. What was surprising, however, was that the Italians "not only agree[d] to the tighter HCFC controls proposed in the regulation but also hint[ed] at possibly going further" (ENDS 1993a:38).

Explaining this movement, participants suggest that although some of the Southern countries were instinctively opposed to further controls on HCFCs, they feared how their opposition might be used against them in the methyl bromide debate. More specifically, given the demand on the part of the United States for strong controls on methyl bromide (for reasons outlined in the next section of this paper), the Southern Europeans believed that they needed a stronger position on HCFCs (the issue on which the US was the dragger) in order to ensure that their methyl bromide position remained tenable. In other words, they were willing to "budge" on HCFCs to justify a "stick" on methyl bromide.

After another couple of months, EC Environment Ministers finally agreed something close to this proposed regulation: a 2.6 per cent cap and a 2015 phaseout date (AE 1993a). Reports suggest that this was only decided after qualified majority voting, with the best guess being that the French and the Spanish (who had an Atochem-owned HCFC plant on their territory) together constituted the defeated opposition (ENDS 1993b:35).

The European Parliament, however, was not satisfied with this, and proposed its own set of amendments. They wanted the cap to be lowered to 2 per cent and HCFC consumption to be eliminated by the year 2002. The Parliamentarians also proposed that controls be placed upon production as well as consumption (with attendant implications for HCFC exports) (ENDS 1994a:36). These amendments, however, were rejected by the Ministers when they reconvened in June 1994 (ENDS 1994b:36). The Regulation received second reading from the Parliament in the late autumn of 1994 and entered into force on 23 December 1994.

With the tenth anniversary of the Vienna Convention approaching, attention turned to the possibility of regulatory reform which tightened *global* controls on HCFCs yet again. The EC Environment Commission Ritt Bjerregaard called for, in September 1995, greater action in a range of areas, HCFCs included. A number of countries -- Austria, Belgium, Denmark, Finland, Germany, the Netherlands and Sweden, of course backed by the

Commission itself -- picked this up and pushed for a strong negotiating position at a Council Meeting held on 6 October 1995. Others -- France, Greece, Ireland, Portugal and Spain -- felt less of a sense of urgency. Nevertheless, the former were successful, securing a relatively forward-looking negotiating position for the Commission to take to the Vienna Conference of the Parties two months later. This position called for the cap to be brought down to 2 per cent, leaving the phaseout date at the already-agreed date of 2015 (EE 1995:I1). Again, the fact that the Union was making little progress on the methyl bromide issue helps to explain this relatively pro-active stance.

In Vienna in December, the international community reached a compromise on HCFCs. While the reduction and elimination timetable remained the same (primarily at the continued insistence of the United States), a lower baseline figure was accepted -- led by the EU, the new controls used as a base 2.8 per cent of 1989 CFC consumption plus 1989 HCFC consumption. Critics continued to highlight the fact that controls were placed only upon consumption, not production as well. As a consequence, the potential for export production in the EU remained high. Indeed, given that the controls on HCFCs consumption in developing countries were rather far in the future -- a stabilisation date of 2016 (based on 2015 levels), with a final phaseout by 2040, was agreed in Vienna -- the scope for massive increases in HCFC production remained.[28] This no doubt pleased those with large HCFC production capacity.

Indeed, the development of the European position can, in part, be explained by concerns about industrial interests. With the French so heavily committed to HCFCs as alternatives to CFCs, it is understandable that they would want the Union to go slower on proposals for controls. This is given greater tangibility when one recognises that a 0.1 per cent difference in the cap calculated (that is, for example, the difference between a cap at 2.5 per cent and one at 2.6 per cent) would mean a difference in allowable EC consumption of approximately 3,500 tonnes a year,[29] which could translate into sales revenues

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[28] Indeed, these controls may serve to encourage short-term consumption of these chemicals in the developing world (in order to increase a country's base-line figure). See, generally, Krueger and Rowlands (1996).

[29] This calculation is based on the fact that 1989 consumption of CFCs in the EU-15 was reported as 236,643.34 tonnes (UNEP 1993). While 0.1 per cent of this is 237 tonnes, the fact that HCFCs have lower ODPs than CFCs would allow approximately 11-18 times as much to be produced. This gives an approximate value of 3,500 tonnes.

of US$10 million a year.[30] Though this annual figure is by no means astronomical, it could easily grow into significance over a period of years. Accordingly, the interests of the French in securing as long a payback period as possible are not surprising.

Ongoing Concerns

Controlling Methyl Bromide

Just as HCFCs began to attract considerable attention at the 1990 Meeting of the Parties, methyl bromide garnered many of the headlines at the 1992 Meeting. In the EU, this ozone-depleting substance is mainly used as a soil disinfectant in agriculture, as well as a disinfectant for agricultural products. The only methyl bromide producer in the Union is Atochem (ENDS 1993c:37), with Greenpeace estimating that it made 50,000 tonnes of the chemical between 1986 and 1995 (just over 7 per cent of the global total). Use of the compound in Europe, meanwhile, has been estimated at 19,000 tonnes per year (about one-quarter of the global total) (van Haasteren 1994:16).

In preparation for the 1992 Copenhagen Meeting of the Parties, European Environment Ministers met on 20 October of that year. At that meeting, the Dutch representatives pushed for tight European regulation, and a strong negotiating position at the upcoming Conference of the Parties. Their experience with the chemical had been far from positive: because it had polluted soil and groundwater in horticultural areas, the Dutch government had already agreed to ban it at home. As a first step towards a similar Europe-wide policy, they urged a 70 per cent reduction by 1995 (ENDS 1992b:37).

Others, though less adamant, still called for regulation. The United Kingdom, for example, supported a 25 per cent cut in methyl bromide production by the year 2000. However, a number of Southern states (namely, Greece, Spain and Italy -- three major users of the chemical -- and France -- the major producer) fought these moves (ENDS 1992b:37). The interests of these countries, particularly the consumers, lay in the fact that methyl bromide was such an effective fumigant (it is easy to apply and it causes yields to increase dramatically) and that the agricultural crops most dependent upon it (strawberries and tomatoes) were important to their economies. They were

[30] This figure is estimated by recognising that HCFC-22 and HCFC-141b/142b (the HCFCs that Atochem currently produce) were valued at US$2.50/kg and US$4.00/kg respectively (Greenpeace 1995:16).

particular concerned about how competitors across the Mediterranean might be able to gain an advantage, were the use of methyl bromide to be restricted in their home countries. After debate and discussion, the EC Ministers agreed that the "Community would ask the Copenhagen meeting to include methyl bromide for the first time on the list of controlled substances, seeking to stabilise output at 1991 levels by 1995" (Reuters 1992).

Amid much debate over methyl bromide in Copenhagen, the more sceptical among the European countries highlighted uncertainties in the special assessment reports to support their position. They were supported in this position by many developing countries, who feared not only increasing prices due to restricted supplies, but also the prospect of trade restrictions upon their agricultural exports (which are in effect "made with" the chemical) (Rowlands 1993:27-28).

On the other hand, the United States was among the most pro-active, originally calling for the elimination of non-essential uses of methyl bromide by the year 2000 (UNEP 1992:18). United States interest in the issue was focused by the fact that, because it was anticipated that the ozone-depleting potential (ODP) of methyl bromide would be set at 0.7, the United States would automatically be required to take action, regardless of the outcome of the Copenhagen Meeting. Under the terms of Title VI of the US Clear Air Act (1990 Amendments), the production and importation of any substance with an ODP above 0.2 must be phased out within seven years. Given the importance of agriculture to states like California and Florida -- and the potential of Mexican farmers to gain a competitive advantage (for they could continue to use this effective fumigant) -- the US delegation pushed hard for global controls. They, however, were only partially successful: it was finally accepted that industrialised countries would freeze their consumption at 1991 levels by 1995 (ENDS 1992c:34).

After Copenhagen, the Commission emerged with a proposal on the way in which the Conference's commitments could be implemented by the Community. Going beyond simply what was agreed in Copenhagen, reports circulated that the Commission might propose a 20-30 per cent cut by the middle of the decade, with further reductions towards the decade's end (ENDS 1993d:38). Were there ever such a proposal, it fell victim to the same forces that brought down the HCFC proposals (see above), and thus what emerged in June 1993 was tamer.[31] Nevertheless, it still went further than the international

[31] DGVI -- the directorate general for agriculture -- was reported to be particularly keen to keep to the Copenhagen target (Reuters 1993).

agreement, for the Commission proposed a 25 per cent reduction of 1991 methyl bromide production levels by 1996 (though no further cuts were mentioned).

At a meeting of the Environment Council in June 1993, France and Greece immediately registered their opposition to the Commission's recommendations; Italy reserved its previous position in opposition, and some observers suggested that Spain was wavering (ENDS 1993a:38). However, at a Council meeting on 5 October of the same year, some movement was evident. More specifically, France and Spain suggested that a 25 per cent reduction was allowable, with it taking effect in 2000 (ENDS 1993b:35).

When the Regulation was finally agreed by Ministers at the end of 1993, consumption levels had been frozen at 1991 levels from 1995 (mirroring the international position), while a 25 per cent reduction by 1998 was to follow (thus going beyond the international position). This was a compromise proposal that had been put forward by the Belgian Presidency, meant to fall between those who wanted more (including Denmark, the Netherlands and Germany, many of whom were taking unilateral action on the chemical) and those who wanted somewhat less (particularly France, Greece, Spain and Portugal) (ENDS 1993c:37).[32]

During preparations for the 1995 Vienna Conference, however, methyl bromide again attracted much debate. When discussions in the Council began, it became clear that the dividing lines had shifted slightly, though perhaps significantly. While, Greece and Portugal continued to oppose any further controls, two traditional opponents of regulation -- Spain and France -- indicated their willingness to support a 50 per cent cut by the year 2005.[33] By doing so, they joined Italy in a common position (ENDS 1995a:42, 1995b:37). On the other hand, the Nordic countries, the Netherlands and Austria pushed for a complete phaseout by 2001 (EE 1995:I1). The United Kingdom and Belgium

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32 "The argument for doing so is based above all on the risk of competition distortion with non-member Mediterranean countries" AE (1993b). The proposed regulation was sent to the Parliament early in 1994. As with the HCFC proposal, the Parliamentarians went further -- in this case, they proposed a complete prohibition of the chemical by the end of 1999 (ENDS 1994:36). Ministers, however, rejected this amendment in June, and the original proposal eventually came into effect.

33 Nevertheless, many still highlighted the potential economic impact of methyl bromide regulation. One report, for example, claimed that "to ban the use of methyl bromide in Europe could lead to agricultural losses in France, Spain, Italy and Greece equivalent to PTS 300 bn/y. It is estimated that this could cost 14,300 jobs in Spain" (PE 1995:51-52).

took an intermediate position: supporting a 50 per cent reduction by 2000 (ENDS 199a:42, 1995b:37).

In the end, the Chair's position -- that is, Spain -- prevailed, and with this stance, the EU entered the Vienna negotiations. At the Conference of the Parties itself, methyl bromide proved to be the key issue upon which the Union was "behind" most other major industrialised countries. (See the discussion in the previous section about how this issue is linked to the HCFC debate.) Continuing to be spurred by the economic interests generated by its own domestic legislation, the United States pushed for an advanced phaseout date (though with significant exemptions).[34] The EU, however, tried to resist this movement: though Germany and the UK reportedly supported a 2001 phase-out, southern states (particularly Spain) desired less (EPL 1996:67). In the end, the Parties agreed to a complete phaseout of methyl bromide by 2010. Reflecting its concerns for a level playing-field, "Spain, acting as EU President, insisted that the process should include trade measures against non-parties to the Protocol. Its main concern is that it will suffer from unfair competition from Morocco which is not a party and will be able to use methyl bromide freely" (ENDS 1995c:36).[35] Again, we see concerns about competitiveness entering discussions about the EU's external environmental regulatory reform policy on ozone-depleting substances.

Other Issues

The focus upon CFCs, HCFCs and methyl bromide should not distract from the fact that there are other ozone-depleting substances. Controls on halons were present in the original Montreal Protocol, while regulations on carbon tetrachloride and methyl chloroform were introduced in 1990; the elimination of hydrobromofluorocarbons, HBFCs, moreover, was agreed in 1992. It is certainly the case that concerns about industrial interests, and competitiveness more generally, have affected the discussions about controlling the production and consumption of these chemicals. The United Kingdom, for example, pushed for a slower phaseout of methyl chloroform during a debate among European ministers about it in early 1992. It was reported that the UK position was "on the grounds that it is used by many small businesses which face difficulties in

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34 The US Environmental Protection Agency pushed for a global phaseout by 2001 for its officials thought that "a level playing field would be most fair to those in the agricultural community, and the best and fastest way to develop alternative pest control tools" (USEPA, Methyl Bromide Home Page, WorldWideWeb).

35 Another report also notes that some countries feared "the competitive advantage for States not bound by the control measures of the Protocol" (EPL 1996:68).

finding substitutes" (ENDS 1992d:68). The fact that ICI was producing it as a substitute for CFC-113 no doubt also entered the calculation.

There are other issues that have been, and will probably continue to be, important to this debate. The definition of "essential uses" is one such instance. Companies and governments, for example, may use this as a means to protect potentially-affected interests and entities. The concern about the production and consumption of ozone-depleting chemicals in the developing world is another. We have already seen this interest in the debate about HCFCs (with European producers wanting to ensure that markets for these chemicals will emerge in the South). Any movement to bring forward controls on HCFCs would inevitably generate even further debate.

Concluding Remarks

The purpose of this contribution has been to explore regulatory reform in the sector of ozone depleting substances, highlighting how the conflicting goals of environmental protection and economic competitiveness influenced policy change. Concerns about economic competitiveness, and the interests of industry more generally, have affected the development of the European Union's policy on ozone layer depletion. From the views expressed by the British over CFC regulation, through the interest shown by the French in HCFC controls, to the position of the southern EU countries in the methyl bromide debate, it is clear that concerns about the way in which an EU policy may impact Member States' interests, economically-defined, has played a role in EU decision-making: states resisted reforms which could undermine their domestic economic positions, and advocated reforms which either expanded their export markets or preserved their competitiveness by spreading internationally the costs originally borne through unilateral action. Moreover, these concerns have expressed themselves both inside the Union -- that is, in the Council of Ministers -- and externally -- that is, when the EU has participated in global negotiations. Consequently, those advancing the thesis that industrial interests and worries about economic competitiveness exercise an important influence on the formation of environmental policy in the EU have been given some support by this case-study.

At the same time, however, the evidence has also revealed there were a number of instances throughout the history of the issue when regulatory reform could not be explained by corresponding shifts in economic calculations -- for example, the relative greening of the United Kingdom in 1988/89, as well as the incremental change of heart shown by the French in the early years of the

present decade. Caution, therefore, should be exercised when striving to explain the development of EU environmental policy. Other factors -- for example, non-economic concerns on the part of Member States, the functioning of domestic institutions, the effects of advancing scientific knowledge or simple conference dynamics -- must have played a part.[36] Indeed, the paper has illuminated occasions when the Commission, acting as a semi-autonomous agent of environmental protection, successfully pushed regulatory reform faster or in a different manner than the states desired.

Therefore, a cautious-endorsement of the hypothesis -- that is, that concerns about economic competitiveness, and the interests of industry more generally, have influenced the development of the European Union's policy on ozone layer depletion -- is offered in this paper. It certainly helps to make sense of many of the intra-European and global debates and negotiations on the issue of ozone layer depletion, but it is not a panacea.

[36] I pursue this point after considering an 'interest-based analysis' of the climate change issue in Rowlands (1995b).

References

AE (1993a) "Environment Council Agrees to Limit Substances Affecting the Ozone Layer," *Agence Europe*, 4 December.

AE (1993b) "Ministers Prepare Dossiers on Packaging and Waste," *Agence Europe*, 7 October.

Benedick, Richard (1991) *Ozone Diplomacy: New Directions in Safeguarding the Planet* (London: Harvard University Press).

Chance, C. (1995) *The European Union -- Understanding and Influencing Policy and Law-Making* (London: Clifford Chance).

DoE (1976) United Kingdom Department of the Environment, Central Unit on Environmental Pollution, *Chlorofluorocarbons and their Effect on Stratospheric Ozone*, Pollution Paper No. 5 (London:HMSO).

EB (1993) "EC Weakens Montreal Protocol Targets," *Environment Business*, 19 May.

EE (1995) *Europe Environment*, No. 462, 3 October.

ENDS (1992a) "Ozone Layer Left at Risk by New Global Agreement," *ENDS Report*, No. 214, November.

ENDS (1992b) "HCFCs, Methyl Bromide to Dominate Ozone Layer Meeting," *ENDS Report*, No. 213, October.

ENDS (1992c) "Environment Ministers Agree Tougher Rules on CFCs," *ENDS Report*, No. 215, December.

ENDS (1992d) "Ministers Agree on Ozone Depleters, Sulphur in Gas Oil," *ENDS Report*, No. 206, March.

ENDS (1993a) "Brussels Launches New Talks on Ozone Depleters," *ENDS Report*, No. 221, June.

ENDS (1993b) "Majority Voting Looms on Landfills, Ozone Depleters," *ENDS Report*, No. 225, October.

ENDS (1993c) "Ministers Agree on Climate Treaty, Ozone Depleters, Packaging," *ENDS Report*, No. 227, December.

ENDS (1993d) "Brussels Prepares Controls on HCFCs, Methyl Bromide," *ENDS Report*, No. 217, February.

ENDS (1994a) "EC Institutions Battle Over Curbs on Ozone Depleters," *ENDS Report*, No. 229, February.

ENDS (1994b) "Go-Ahead for Controls on Ozone Depleters," *ENDS Report*, No. 233, June.

ENDS (1995a) "Ministers Face Deadlock at Ozone Layer Meeting," *ENDS Report*, No. 248, September.

ENDS (1995b) "Ministers Tighten EC Position on Ozone Depleters," *ENDS Report*, No. 249, October.

ENDS (1995c) "Ozone Layer Left at Risk as Talks Stumble on Funding," *ENDS Report*, No. 251, December.

EPL (1996) "Montreal Protocol: The Vienna Meeting," *Environmental Policy and Law*, Vol. 26, Nos. 2/3.

Engelmann, Frudolf (1982) "A Look at Some Issues Before an Ozone Convention," *Environmental Policy and Law* Vol. 8, No. 2, pp.49-56.

Follett, Christopher (1992) "France at Odds with EC Partners at Ozone Talks," *Reuter News Service*, 24 November.

Gamlen, P.H. et al (1986) "The Production and Release to the Atmosphere of CCl_3F and CCl_2F_2 (Chlorofluorocarbons CFC-11 and CFC-12)," *Atmospheric Environment*, Vol. 20, No. 6, pp. 1077-85.

Grant, Wyn et al (1989) "Large Firms as Political Actors: A Comparative Analysis of the Chemical Industry in Britain, Italy and West Germany," *West European Politics*, Vol. 12, No. 2, pp. 72-90.

Grant, Wyn et al (1988) *Government and the Chemical Industry: A Comparative Study of Britain and West Germany* (Oxford:Clarendon Press).

Greenpeace (1995) *The Ozone Layer Destroyers: Whose Chlorine and Bromine Is It?* (Amsterdam:Greenpeace International).

Haas, Peter (1993) "Stratospheric Ozone: Regime Formation in Stages," in Oran R. Young and Gail Osherenko (eds.), *Polar Politics: Creating International Environmental Regimes* (London:Cornell University Press).

Haigh, Nigel (1989) *EEC Environmental Policy and Britain*, Second Revised Edition (Harlow:Longman).

Jachtenfuchs, Markus (1990) "The European Community and the Protection of the Ozone Layer," *Journal of Common Market Studies*, Vol. 28, No.3, pp. 261-277.

Kreuger, Jonathan and Ian H. Rowlands (1996) "Institutions for Global Environmental Change: Protecting the Earth's Ozone Layer," *Global Environmental Change*, Vol. 6, No. 3, pp.245-247.

Layman, Patricia (1986) "Aerosols Back on Road to Success," *Chemical and Engineering News*, 28 April.

Litfin, Karen (1994) *Ozone Discourses: Science and Politics in Global Environmental Cooperation* (New York:Columbia University Press).

Love, Brian (1993) "EC Plan for HCFC Phase-Out Stifled, France Blamed," *Reuter News Service*, 18 March.

MacKenzie, Debora (1988) "Now it Makes Business Sense to Save the Ozone Layer," *New Scientist*, Vol. 120, 29 October.

MacNeill, Jim et al (1991) *Beyond Interdependence: The Meshing of the World's Economy and the Earth's Ecology* (Oxford: Oxford University Press).

Maxwell, James and Sanford L. Weiner (1993) "Green Consciousness or Dollar Diplomacy?: The British Response to the Threat of Ozone Depletion," *International Environmental Affairs*, Vol. 5, No. 1, pp.19-41.

McConnell, Fiona (1991) "Book Reviews," *International Environmental Affairs*, Vol. 3, No. 4, pp. 318-20.

Morrisette, Peter (1989) "The Evolution of Policy Responses to Stratospheric Ozone Depletion," *Natural Resources Journal*, Vol. 29, No. 3, pp. 793-820.

NS (1975) "MP Calls for British Fluorocarbon Ban," *New Scientist*, Vol. 67, 7 August.

NS (1978) "Verdict Still Open on Fluorocarbons," *New Scientist*, Vol. 79, 21 September.

OECD (1976) Organisation for Economic Co-operation and Development, *Fluorocarbons: An Assessment of Worldwide Production, Use and Environmental Issues (First Interim Report)* (Paris: OECD).

Oye, Kenneth and James Maxwell (1995) "Self-Interest and Environmental Management," in Robert O. Keohane and Elinor Ostrom (eds.), *Local Commons and Global Interdependence* (London:Sage Publications).

Parson, Edward (1993) "Protecting the Ozone Layer," in Peter Haas, Robert Keohane and Marc Levy (eds.), *Institutions for the Earth: Sources of Effective International Environmental Protection* (Cambridge:MIT Press).

Parson, Edward and Owen Greene (1995) "The Complex Chemistry of the International Ozone Agreements," *Environment*, Vol. 37, No. 2, March, pp. 16-20, 34-43.

PE (1995) *Phytoma Espana*, No. 69, 31 May.

Purvis, M. (1994) "Yesterday in Parliament: British Politicians and Debate Over Stratospheric Ozone Depletion, 1970-92," *Environment and Planning C: Government and Policy*, Vol. 12, No. 3, pp. 366-67.

Reuters (1992) "EC Ministers Attack New Ozone-Eating Chemical," *Reuter News Service*, 20 October.

Reuters (1993) "EC Proposals on HCFCs and Methyl Bromide Due on May 12," *Reuter News Service*, 3 May.

Rowlands, Ian (1993) "The Fourth Meeting of the Parties to the Montreal Protocol: Report and Reflection," *Environment*, Vol. 35, No. 6, pp. 25-34.

Rowlands, Ian (1995a) *The Politics of Global Atmospheric Change* (Manchester: Manchester University Press).

Rowlands, Ian (1995b) "Explaining National Climate Change Policies," *Global Environmental Change*, Vol. 5, No. 2.

Schoon, Nicholas (1990) "Deal to Save Ozone Layer Agreed," *The Independent*, 30 June.

Thornton, Grant (1990) *1989 Production and Sales of Chlorofluorocarbons 11 & 12* (Washington, DC:Chemical Manufacturers Association, Fluorocarbon Programme Panel).

UKSORG (1988) United Kingdom Stratospheric Ozone Review Group, *Stratospheric Ozone* (London: HMSO).

UNEP (1993) "The Reporting of Data by the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer," UNEP/OzL.Pro.5/5, 24 August.

UNEP (1992) UNEP/OzL.Pro.4/2.

van Haasteren, J. (1994) "Methyl Bromide Damages the Ozone Layer," *Change*, No. 18, p.16.

WCED (1987) *Our Common Future* (Oxford: Oxford University Press).

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